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Tractors
Office,

One Moment,
Wise Men...



One moment, Wise Men . . .
I'd have a word with you.

This journey that you undertake—
I know its secrets, every one.

I know the star you chase,
The gifts you bear,
And Whom it is you seek.

Believe me, Wise Men . . .
I wish I rode beside you,
But since I cannot,
I ask of you this favor—
Pray, take my gift along.

'Tis a humbler gift by far,
Than the very least of yours—
A poor vessel,
Formed of common clay
And much the worse for lack of use.

But notice, Wise Men . . .
The fullness of it now!
Brimful, it is,
Of a rare and priceless compound
No magician can concoct . . .
Of a mixture, brewed in heaven,
That all the wealth of ages
Cannot buy.

So, Wise Men . . .
I beg you, take my gift . . .
Offer it with all the treasures of your own,
And as you offer it,
Recite for me this greeting:

*"Here, King, is a beggar's gift,
An earthen vessel . . . crude, misshapen,
And of meager worth at best.*

*"Still . . . it's all I have to give,
And, bidding You accept it, King,
I send You this . . . ,*

An overflowing heart!"



JOHN DEERE • MOLINE, ILLINOIS

The farm practice requirements at the New York State School of Agriculture at Cornell presents a very controversial topic. In the October issue of the Cornell Countryman there was an anti-farm practice article, followed by a farm practice article in the November issue. But this did not present the entire story, so, on November 22, 25, and 26, the Cornell Countryman polled the students who had completed all or part of their farm practice requirement, in order to determine their opinions concerning the issue. Unlike the forms circulated by the farm practice office, the Countryman's forms did not require a signature, the purpose being to get the most unbiased answer possible. The results are being published for the purpose of clearing up some false faculty and student notions and to aid in improving the program.

407 questionnaires were returned and tabulated. The individual questions and the percentages of yes and no answers are as follows:

1. Do you think that there is any value to be gained from farm practice?
Yes -- 91% No -- 9%
2. Have you gained any value from farm practice?
Yes -- 81% No -- 19%
3. Do you think you have received a sufficient number of credits for the amount of work that you have done?
Yes -- 48% No -- 52%
4. Considering the current farm wages, do you think that you have been sufficiently paid for farm work that you have done?
Yes -- 41% No -- 59%
5. Should there be less actual farm work and more direct work in the student's field of specialization?
Yes -- 76% No -- 24%
6. Are you satisfied with the farms that you have worked on?
Yes -- 75% No -- 25%
7. Is there too much emphasis on dairy farming in the requirement?
Yes -- 56% No -- 44%

(over)

8. Can any practical improvements be made in the requirement.

Yes -- 85% No -- 15%

When these questions were tabulated by classes, there was no noticeable trend.

But a recognizable trend developed when the questions were tabulated as to number of farm practice credits held. As the number of credits increased, negative replies to questions 3, 4, and 6 decreased, especially for 3, which changed to 40%. Persons who hadn't fulfilled their requirement held a more affirmative position towards questions 5, 7, and 8 and a more negative view on questions 1 and 2.

Brief suggestions were asked for, and the 85% who suggested improvement in the program were not hesitant to present their views. The improvement that was mentioned the most was to increase the work in the student's field of specialization, recommended by 76% of those answering questions. This shows a large section of dissent against the present flexible 13-point minimum for actual farm work. One student pointed out that it is hard for a high school graduate with no experience to get 13 credits in his first summer of work, and thus another summer must be sacrificed before work can be begun in the student's field of specialization.

Other noteworthy suggestions that were frequently mentioned were: lowering the minimum number of credits required, making the practice requirement voluntary, less emphasis on the dairy requirement, more emphasis on rural living rather than a practical knowledge of farming, and improving the method for determining credit. Many students wanted improvement in the method of selecting farms for fulfilling the requirement.

As one sophomore put it: "The person should be placed on a farm where the farmer is willing to spend the time to teach the student the important things he should know. He should not be given just the jobs which require a strong back and a weak mind, but rather jobs that require responsibility."

Other suggestions providing food for thought were: more emphasis on farm work done outside of New York State, improving administration, putting less weight on the employer's opinion which may be colored by personal likes and dislikes, and raising wages so that the student "can afford to go to college."

In addition, "city boys" felt that they were being treated unfairly, while others (apparently farm boys) felt that there should be additional restrictions on city boys.

It is hoped that these statistics and suggestions will lead to the improvement of the program, one of the most important factors in keeping the New York State College of Agriculture at the top.

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Cornell Countryman

Vol. LV—No. 3

Founded 1903

Incorporated 1904

Member of Agricultural College

Magazines, Associated

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CORRECTION IN NOVEMBER ISSUE: Due to a typographical error in Oworen Reviews Research News, the word gain was printed for gain.

The Cornell Countryman is published monthly from October through May by students in the New York State Colleges of Agriculture and Home Economics, units of the State University of New York, at Cornell University. Entered as second class matter at the Post Office, Ithaca, New York. Printing by Art Craft of Ithaca. Subscription rate is \$1.75 a year or three years for \$2.75; single copies, 25 cents.

DECEMBER, 1957

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in the world



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From the Editor's Desk

Time for a Change!

"FARM practice needs revision", is the opinion of 85% of the 407 agricultural students who voted on farm practice issue last month.

But, that farm practice is both valuable and necessary was upheld by a large percentage of the voters. One can therefore see that the vote presents a two-fold problem. How can the farm practice program be revised so that the students and faculty are satisfied with it and how can this revision be made without destroying its value?

Before making revision suggestions we should review faculty opinion concerning the present practice requirement.

A. W. Gibson, Director of Resident Instruction and Professor of Personal Administration, and most college administrators, see the need for a "high quality" farm practice system. They contend that, this being an agricultural, state supported, college, students registered in it should have some practical working knowledge of agriculture. The most beneficial and perhaps the only way to acquire this knowledge is through actual farm work. Though the administrators are in favor of this system they do recognize the need for revision.

Faculty members of the science departments (biological, mathematical, and chemical) find little value in the farm practice system. They would rather see the student working in his major scientific field than on some "cow" farm.

The agricultural economics department and the social science departments are doubtful about the system's value as it relates to their departments. That the student is afforded little time to observe economic and social aspects of rural or farm life is the reason for condemnation of the system.

However, opposed to this argument of "little direct value," is W. A. Hagen, Dean of the New York State Veterinary College. Doctor Hagen offered a comprehensive view of the entire system. He felt that the Professor of Farm Practice was doing a fine job considering the difficulty of the task. The dean emphasized that farm practice is an "important factor" in judging a candidate for veterinary school. Though advocating continuation of the farm practice system, Dean Hagen recognized the need for revision. He stated that the mere fact that there was dissention means that the system has faults.

Thus the problem becomes extensive. We must consider both undergraduate and graduate school viewpoints. We must realize that although one could conceivably master botany without farm practice it would be impossible to do the same in animal husbandry.

Considering the earnest desire for practical improvements, as written on the ballots by students, these points should be considered:

1. Increased work in major field of study. (If studying botany, for example, one should work in laboratories and green houses.)
2. Improved selection of farms for students. (Both American and foreign students have registered complaints concerning disinterested farmers for whom they worked.)
3. Less emphasis on dairy farming. (Though this statement had widespread support on the ballot, it is theoretically impossible to de-emphasize dairy farming since New York State is, in the main, concerned with the dairy industry.)
4. Committee evaluation of farm practice credits. (Few question the integrity of a one-man review, but where so much hinges on a few points, it is psychologically advisable to have a committee.)

Presented above, is a partial list of student recommendations for improvement of the present farm practice system. That improvement is needed cannot be denied. But when shall improvements be made and who shall make them?

The newly formed faculty committee should undertake the review of this system. This review and subsequent suggestion for change should be started as soon as possible—GPH

Around the Upper Quad

Newly elected freshman representatives to **Ag Dom** are: Jeanne Bammesberger, Home Economics; Ralph Harper and Margaret Allen, Agriculture.

November 20th there was a joint meeting of Ag Dom and the officers of upper campus clubs. The guest speaker at this meeting was Professor Reeder whose topic was "How to promote more students joining clubs and how to keep them after they join." An important question for discussion was "Why do we join certain clubs and not others, and once we have joined why are we active or inactive?"

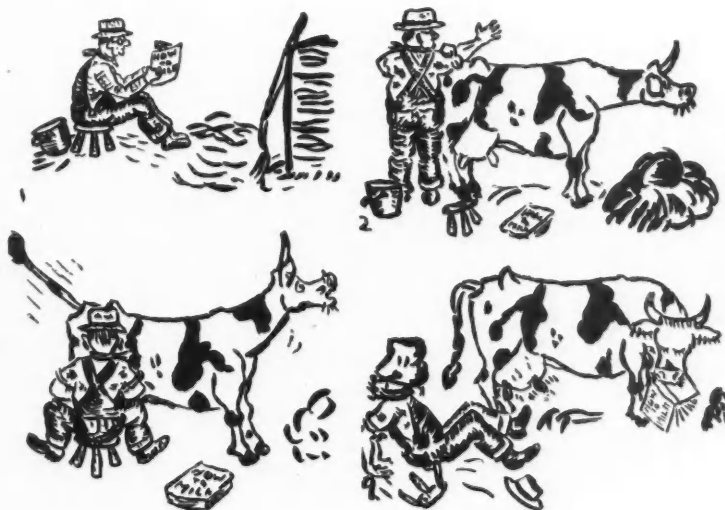
A group of eight members from **Cornell Grange** started this fall's activities with two installation dates. On November 5th they installed the officers of Auburn and Senate Granges, at Auburn, New York. These Cornellians also installed officers at Enfield Valley Grange on November 12th.

Dr. Main of the Plant Pathology Department was the guest speaker at a recent meeting of the **Pomology Club**. He discussed the characteristics, behavior, and control of orchard nematodes.

Newly elected officers of **Veg Crops Club** are Ann Marie Behling '59, president; Stan Comstock, grad., vice-president; Carol Hencile, secretary-treasurer.

The **Floriculture Club** will give its annual Christmas party on Tuesday, December 17th, in the Plant Science Seminar Room at 8:00 p.m. The party is open to all floriculture students and their dates, and all of the faculty and staff in the floriculture department, and their friends and families. There will be games, music, and refreshments.

Life Without Farm Practice?



DECEMBER, 1957

The EMPIRE Story

TWO MILLION

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On the last day of November, 1957, 131 months after Empire Livestock Marketing Cooperative was founded, the two millionth head of livestock handled by the organization was consigned and sold at a dairy herd dispersal on the farm of Joseph Triumpho, near St. Johnsville, New York.

To mark this important event in New York State livestock marketing, both the consignor and the buyer received \$100, five percent Empire Income Debenture Bonds.

In the picture, O. C. Koenig, Empire's Sales Supervisor, presents a bond to consignor Joseph Triumpho. The two men in the center are Sidney and Darwin Putnam of Frankfort, who bought the two millionth animal shown in the foreground for \$480, top price paid the 54 cow sale. Far right is Howard Mattice, Manager of Empire's West Winfield Stockyards, who was ring clerk at this special sale, and presented their bond to the Putnam Brothers.

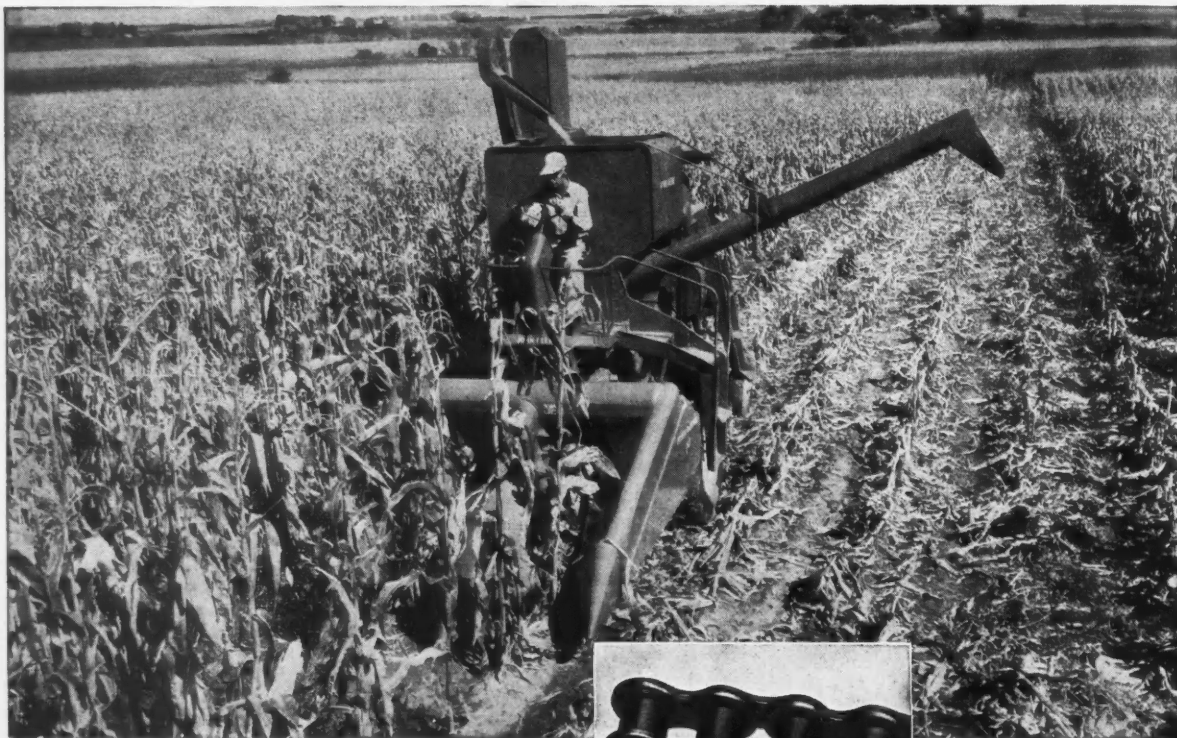
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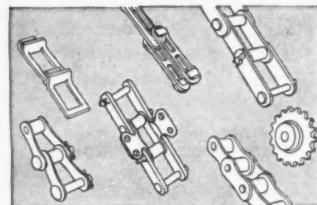
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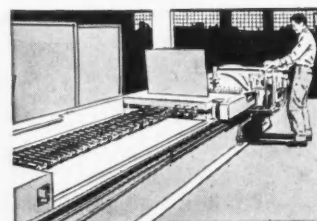
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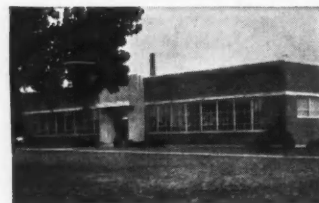


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Mary Had a Little Lamb . . .

By ROBERT D. LOEB '61

Mary's little lamb has found a home in Cornell's Department of Animal Husbandry.

THE story of Mary and her lamb is an old one, but have you ever thought of the research which goes into producing the not so little lambs of today? At the Cornell Department of Sheep Husbandry, the benefits of sheep research are being brought to farmers throughout the United States.

CORnell University's Department of Animal Husbandry was founded under the Morrill Act. The sheep section grew rapidly under Professor J. P. Willman, head of the department from 1929 to 1957. As stated by Professor D. Hogue, the new head of the department, the purpose of the sheep department is, "teaching and research in sheep husbandry."

Research is both basic and applied at Cornell. Applied research involves the New York State farmers. Basic research includes sheep throughout the world. Much of the research is being done on sheep feeding. The department is now working on breeding, and plans to increase its experiments in this field. Some work is being done on parasite control in cooperation with the New York State College of Veterinary Medicine at Cornell. Information on sheep herding is made available to farmers through bulletins and visits from the county agents. The county agents receive information from the extension specialist at Cornell, Professor W. Brannon.

The Cornell sheep department operates an independent farm, hiring three full time shepherds and one student. It uses the Waite farm, located nearby, as the base for operation.

On the farm the department keeps ewes, lambs, and purebred rams. In the summer the sheep are pasture fed and in the winter they are kept in the barns and fed hay and silage. The breeds of ewes kept consist of Dorset, Corridale, Hampshire, Shropshire, Southdown, and crossbreeds. There

are 250 ewes, 320 feeder lambs that are used for experimental purposes, and 8 breeding rams. 110 ewe lambs will be slaughtered for meat or used for replacement purposes this year.

THE sheep raised at Cornell are sold as either fat lambs or purebred rams. Most of the fat lambs go through the meat shop at Cornell except when large numbers are to be sold. Then they are sold through local markets. Rams are usually sold to New York State commercial men. About 75% of the department financing comes from its own returns. The remainder is obtained from State and other funds.

The department of Sheep Husbandry is carrying on four main groups of experiments. First and most important is the experimental work in muscular dystrophy (stiff lamb disease). It was started in 1933 and is the longest project in existence in the department. The disease is of dietary origin, and in 1945-1946 Professor Willman connected it with a vitamin E deficiency. It is now evident that other factors are involved. Current research

is involved with these factors. Another field of experimentation is the fattening of lambs using hormones. Usually there is an increased growth rate and some rise in feed efficiency when the hormones are included in the feed or implanted under the skin. In the future many farmers may be using hormones for fattening lambs.

The department has recently initiated genetic research, which will become a large program once it gets under way. The department is also working on types of hay grown in New York State. Experiments are concerned with the storage, curing and time of cutting hay.

Although some wool breeds are raised in the United States, most sheep are used for meat purposes. Therefore the program at Cornell is concerned with mutton breeds.

THE research which has been carried on in the past at the Cornell Sheep Husbandry Department has been successful in aiding the sheep raiser, and will continue to bring the benefits of scientific advancements.

A Cornell sheep meets a Cornell cow.





The trees before they start their journey...

**Christmas Tree —
from woods to
garbage can.**

By JILL H. BECKOFF '61

Sweet Smell of Spruce

EACH year, around Christmas time, a bit of the country is brought to the city. Christmas trees are lined up on both sides of the streets and, with a little imagination, the stroller can be walking in the woods. For a few weeks, the smells of the city are masked by the fresh scent of spruce.

The trees have been brought into the city stacked high on the backs of trucks, each tree tied up to form its own little bundle, taking up as little space as possible. Once in the city they go to nurseries and grocery stores, drug stores, candy stores, and five-and-ten-cent stores, to be sold.

Trees which were once rooted in the earth seem imbedded in the concrete, standing at attention, waiting for someone to point and say "That one." A tree may remain for weeks, being moved only when the salesman closes his store for the night, or it may be sold and carried home by a man and his son.

As Christmas nears, last minute shoppers start searching for the trees they want and, on Christmas Eve, the last straggler brings his plant home.

ONCE bought, a tree has several days of glory ahead of it. It becomes the center of interest, the bright spot in the corner of the living room or the middle of the lawn. It is lit up and laden down with decorations: tinsel, bulbs, stars, and strings of beads, and blanketed by a layer of artificial snow.

Each day the tree is touched up a little: something is added; something else taken away; a candy cane is straightened out; a bubble lamp blows and has to be replaced. Each night a show is put on for the neighbors: all the tree lights are lit and the rest of the room is darkened, so that, from the window, all that can be seen is a string of bright lights and bits of tree basking in its glow. The Christmas tree is a thing to be admired, to stop and look at for a minute or two before continuing on one's way.

NOT every tree goes to a home. There are community trees in schools and office buildings and on church lawns, which serve as sites of tree-trimming parties and starting points for carollers. And there is the huge tree in Rockefeller Plaza, the pride of New York City Christmases. Hospitals use gaily decorated trees to cheer up the patients and apartment superintendents brighten up their lobbies with them.

The tree no longer resembles the spruce once in the midst of the woods. It has become a symbol of Christmas. Lights are strung in the shape of the Christmas tree and gifts are wrapped in tree-adorned paper. The tree has become so much a part of the holiday that it now means Christmas.

As the holiday draws near and safety hints are interspersed with Christmas carols, the trees are put into pots of water or sand, electric

cords are checked, people are careful with their cigarettes, and the fallen needles are swept off the floor.

ON Christmas Eve, the trunk of the tree and several bottom branches are hidden behind a stack of gaily wrapped packages, while the children, upstairs, obediently pretending to be waiting for Santa Claus, compare research notes and try to decide just what is in those packages.

This burst of glory is followed by Christmas morning when the gifts are removed, New Year's Day when the decorations are removed, and the next day when the tree is removed.

If a tree is discarded before the children return to school, chances are that it will be reused in any one of a hundred children's games. It may be redecorated with salvaged tinsel or decorations, or it can be turned into a rocket ship, automobile, forest, or anything else that catches the fancy of a child. Only after the players have tired of a tree does it return to its post waiting for the garbage men.

Many ex-Christmas trees, however, never get to see the back of the Department of Sanitation truck they were intended for. Early in January, little boys run around the streets looking for used trees to drag to a vacant lot and contribute to the neighborhood bonfire. These fires blaze for hours, new fuel being added periodically as each boy brings in his latest trophy. The fires are a blazing farewell to Christmas and the Christmas tree.

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4-H boys show their poultry project.

Extension movement promises future leaders for Indian ag.

By S. A. CHIMA '59 Grad.
With JILL H. BECKOFF '61

India - - Fakir to 4-H

WE hear a lot about the so-called underdeveloped nations of the world. Their problems are usually presented very dramatically and the question left in our minds is "Why doesn't anyone do anything about it?" In many areas of Asia something is being done to improve the peoples' economic and social status. Work is being done to raise incomes, improve housing conditions, and wipe out illiteracy and disease.

SINCE most of the countries are agricultural, the brunt of this program is being borne by the rural extension programs. These programs attempt to educate the farmers in practical and scientific methods of agriculture, mainly through demonstration.

The job of these extension teachers is much harder than it may seem. The societies in which they work have been static for years and are just starting to break away from rigid traditions.

It has been found that the most effective way of getting ideas across is to work with the young people of an area. If the prospective farmer can be trained in modern methods before he gets used to the ways of his ancestors he will generally stick to the new ideas. These boys can also demonstrate modern day farming to the rest of the village.

In setting up such a program, however, one must keep in mind the peculiar needs of these areas. For example, the Eastern nations have taboos that

make separate clubs for boys and girls preferable to coed groups.

Another is that most of these organizations will have to work on a small scale. In these countries land is scarce, incomes small, and farming methods primitive. Therefore agricultural projects must be chosen accordingly.

The third thing to be kept in mind is that emphasis should be put upon training and education of the boys rather than immediate economic gains. Since the family is a strong organic unit of production, and poverty is widespread, the idea that the member should keep the money earned from his projects should be discouraged.

THE program should be linked with the existing extension system. In many countries this would place the responsibility for developing a youth extension program with departments of agriculture. However, in India, the example to be discussed here, the job is assigned to the Ministry of Community Development.

A typical set-up in India is that of the State of Pepsu, now a part of Punjab. There is a Young Farmers' Association supplying vocational, physical, and cultural training to teen-aged boys in the area.

The goals of the Association are: 1. teaching more efficient and productive farming methods; 2. affording an opportunity for members to plan, work, and play together; 3. developing a

sense of community responsibility in the boys; and 4. training the boys in personal hygiene.

Each club has a membership of from ten to fifteen boys, about a third of them students. They have an adult leader, usually one of the village's more progressive farmers.

The vocational aspect of the Club's program is, by far, the most important. Through it, each member is assigned a scientific project to work on during the year. In completing this he is expected to use improved practices and, to as great an extent as possible, modern methods. The choice of projects runs the gamut of the agricultural field: crop raising, fruit or vegetable gardening, animal husbandry, poultry keeping, etc.

The growth of this organization seems to attest to its popularity. The membership in Pepsu has passed the 12,000 mark already and the idea of the Young Farmers' Association is spreading to other parts of India.

THE Young Farmers' Association is just the beginning of India's drive to improve her people's economic and social status. Many Indian students studying here and at other universities are part of the new movement. No longer should you ask "Why doesn't someone do something about these underdeveloped nations?" Something is being done and time will show the result of these efforts.

Color in the Land of Kipling

Mechanization is threatening India's 2000 year old history of design.

By BRENDA L. DERVIN '60



Indian women in their colorful saris.

TRAVELING in India is like being in a fairy tale world of color and creativity. The women, particularly, wear a large variety of vividly colored saris that reflect India's 2000 year old eminence as an artistic creator of design and dyeing.

INDIAN textile design is completely the result of creativity. Creativity, in turn, is the result of the Indian's very existence, his feelings for life, and his religion. Creativity is essential to the Indian and textile design has been one facet of creativity in which the Indian has excelled.

Yet, now with the advancement of specialization and technology, the Indian textile artist is losing ground. To understand his position in the complex world of today, one must look back into Rudyard Kipling's India of Kim and Gunga Din.

India's supremacy in textile design probably resulted from the abundance and cheapness of raw materials. There has been no recorded time in India's history when cotton wasn't grown or woven. Silk came from China to India in 3 B.C. Since that time, India's textile concentration has been on silk and cotton.

In addition, the caste system of India, which distinctly divides persons into professions, allowed for hereditary accumulations of skills and life-long practice in the art of weaving and design.

Among the other things which influenced the Indian development of weaving and design, was the court

nobility of the rajah era. The emphasis of this time was on luxurious, decorative fabrics. At the same time, the aboriginal tribes throughout India were developing their own weaving and design methods, and the regions of India were progressing toward embroidery, distinctive only to them.

Thus, we have the three main classifications of fabrics in India: the articles of luxury, the regional embroidery, and the fabrics created by the various aboriginal tribes. In all three cases, the caste system of the nation designated a certain group of people to do textile design and production.

WHILE the Indians were developing these various types of fabrics, they were also advancing in their dyeing techniques. It is India that holds claim to the first utilization of dyeing and advancement of the methods to produce beautiful creations.

Four methods of dyeing were developed over the centuries. The most commonly heard of is block dyeing where a design is cut into wood, paint is rolled over the surfaces of the design, the block is pressed against the fabric transferring the impression.

Tie-dyeing is another of the famous methods of color design. Portions of the fabric are wound tightly and tied with a string. The fabric is then dipped in dye so that the untied parts absorb color and the tied parts don't. The result is a subtle design of gradual color variation.

Resist dyeing is also a time devel-

oped method. Parts of the fabric are treated with a substance that prevents dye or color from seeping through. The color is applied to the whole cloth, while this substance keeps the designated areas free, producing the creator's design.

Finally, the mordant dyeing method uses chemicals that bring out unusual colors when combined with dyes and different type fabrics.

These dyeing methods have resulted in a use of color that lends grace and beauty to Indian textiles. It is in this grace and beauty that the chief charm of Indian design rests. Colors don't just lie on the surface of the fabric; they permeate into the material. Thus, they seem to mature with the sun rays. Instead of fading the colors develop soft tones, so clothes don't look drab, they just become old with the body.

All these dyeing methods have been an outstanding development of Indian creativity—a creativity which results from the Indians beliefs of life.

IN the past the Indian textile worker and designer could follow his beliefs on life in his work. Now mechanization is breaking the link between creativity and livelihood. The textile worker can't return to the past because it is impractical, nor can he go forward for it is against his way of life. India must develop a new system of textile creativity—one that conforms to both the past and the present, yet still allows the Indian his way of life.

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Aggies Flex Their Muscles

**Upper Campus students participate
in wrestling, hockey,
polo, and swimming.**

By MELINDA L. EVERITT '61

THE old adage that a sound mind and a sound body leads to a well rounded individual has had effect on the upper campus. Many "ag" students have combined muscles with brains to get as much out of college life as possible.

A comparatively new sport to the campus because of the former undependable ice surface of Beebe Lake, hockey is starting its first year of organized play under Coach Patton on the artificial ice surface of the James E. Lynah ice rink. There are four "aggies" on the team.

Manager BRIAN CURTIS became interested in ice hockey by watching the Reds of Providence, Rhode Island, an American Hockey Team near his home in Warwick. A senior, he is majoring in agricultural economics.

MIKE BURNS, a native of King, Ontario, has been playing hockey for 13 years. Although formerly a defense-

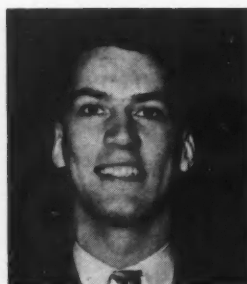
man, Mike is now tending goal for Cornell's varsity team. A sophomore in Agriculture, he expects to major in animal husbandry.

ED VAUGHN first played organized hockey at a New Haven high school near his home in Orange, Connecticut. His interest developed from this start in one of the leading centers of American ice hockey. A varsity defenseman, Ed is a senior in Agriculture, majoring in landscape design.

PAUL MARCUS, the only junior on the team, is majoring in marketing. A forward on the team he became interested in hockey by watching the New York Rangers of the National Hockey League play in his home town of New York City. Although he has been playing since he was 12, this represents his first start in organized play.

LARRY KAUFMANN is the lone "Aggie" representative on Coach Little's varsity swimming team. A free style distance swimmer, he has

Michael Burns



Ed Vaughn



Larry Kaufman



Dick
Vincent



Dave
Auble



Carmon
Molino



Mike
Andrews



been swimming since the age of three. A senior, Larry's major is food technology. He comes from Bronx, N. Y.

THE polo team, coached by Dr. Roberts of the Veterinary School, is one of the most highly rated spectator sports on campus. This year's team earned its rating by their clean sweep of opponents in games so far this year. With four members on varsity, the "ag" school is again well represented.

Although MIKE DREW has been riding horses for the past twelve years at his home in Gorham, Maine, he had never played polo or even seen a polo game until he came to Cornell. A varsity player, Mike is a sophomore majoring in science education.

Riding and hunting experience from the age of six got BILL SPEIDEN interested in polo, although he too had never played. Now the forward, number one position on the varsity, Bill is a junior majoring in animal husbandry. His home is in Somerset, Va.

PABLO TORO, a native of Bogota, Colombia, played polo for three years before coming to Cornell. In his fourth year of polo at Cornell, he is captain of the team and plays the number three position. A fourth year student in agricultural engineering, he will graduate in 1959.

NAT GREW acquired an interest in riding from fox hunting, showing horses, and horse racing. As a fresh-

man this attraction drew him to Cornell's polo team. A sophomore, Nat is playing his first year of varsity polo. Majoring in veterinary medicine, his home is in Dover, Massachusetts.

WRESTLING is one of the most active individual winter sports on campus and its varsity includes six "aggies." DICK VINCENT is the captain of the team and has been wrestling for over eight years. He became interested in wrestling while a freshman in high school at Castile, New York. A major in agricultural engineering, he will graduate in 1959.

DAVE AUBLE, a native of Ithaca, became interested in wrestling while in high school through the efforts of Bill Leyton. A sophomore, this is his first year of varsity wrestling. He is majoring in agricultural business.

CARMON MOLINO also became interested in wrestling in high school. A senior, this is his eighth year of competition. Carmon, from Ontario, New York, is majoring in rural education.

JIMMY CARTER's interest in wrestling started in junior high school with intramural competition. A sophomore, this is his first year of varsity wrestling. A major in science teaching, he is a native of Ithaca.

DAVE KITTS, an economics and dairy husbandry major, is in his fifth year of competitive wrestling. A sophomore, he hails from St. Paul, Minn.

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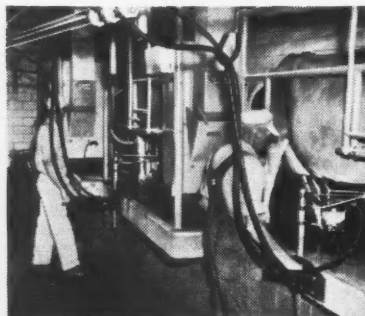
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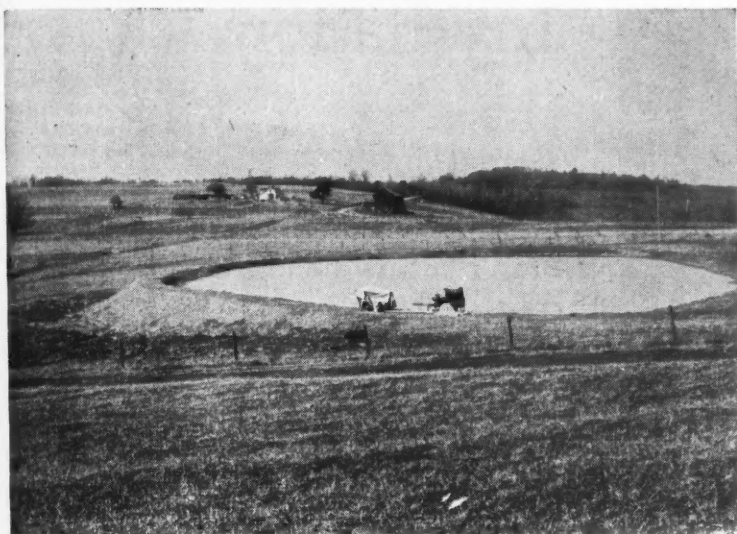
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CORNELL COUNTRYMAN



A farm pond in upper state New York.

**The farmer turns
ditch digger for
fun and profit.**

By MICHAEL D. MARIEN '59

Fishing in Your Own Backyard

THE sun sets in the west, ending your working day, but you still have to get the dinner. To some this may seem a tedious chore, but who can classify fishing as work? A worm, minnow, grasshopper, or some artificial bait, and a few minutes of your time, and out of your farm pond comes the makings of a delicious dinner which has only to be cleaned and tossed into a skillet.

LATER in the evening you sit back and drink in the vastness of the outdoors, flavored by the character of a pond. A duck or heron may pay a brief visit, evoking interest or exclamation. An occasional fish breaks the surface of the water. You feel like a tycoon—you have invested in a farm pond, fast becoming your most valuable acre.

How much of an investment is this? Costs run from four to six hundred dollars. This state doesn't subsidize any phase of construction as some with a greater need for water conservation do, but the State Extension Service will finance the planning.

First the choice must be made between the dugout pond and one with a dam. The two are equally popular.

A dugout or excavated pond, the simplest to build, is best suited to an area with level ground and either soil with a lot of water-holding ability or a permanently high water table. Although it is vital to have a good watershed, precautions should be

taken against flooding. The capacity of a dugout pond depends on the amount of excavation, so it is wise to make the pond deep and to limit the surface area in order to insure against too much evaporation.

A dammed pool holds more water and is adapted to a sloping topography. Because of its sloping nature, the size and condition of the watershed becomes the most important consideration in building a pond of this type. Generally, a five-acre drainage area is sufficient to supply a million gallon pond. Depth and texture of subsoil are also important. A bottom deep to bedrock and containing a high proportion of clay is best.

RUNoff is an important problem of a pond of this sort since water is stored above ground. This problem is solved by constructing a spillway or

trickle tube-spillway combination. Construction of runoff facilities is important, and necessary precautions should be taken. Unless the spillway is of concrete or masonry, both costly methods, a trickle tube should be provided. The purpose of the trickle tube is keeping the spillway dry. This tube may run through the lowest part of the dam's base, with a vertical pipe draining the overflow at the intended surface level, or it may be on the side of the pond horizontal to water level. If the vertical pipe is used it can also serve as a water level marker.

(Continued on page 15)

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Irradiation

**Man's future hamburger--
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THE versatile gamma, cathode and X-rays may soon be put to still another use, that of preserving foods. There are now several means of preserving foods: dehydration, heating, freezing, and chemical preservation, but all have disadvantages.

The high temperatures used in canning cause undesirable changes in foods. Radiation, on the other hand, will kill the most resistant micro-organisms with only a small rise in temperature. In some areas, refrigeration is expensive and hard to obtain. Irradiation, though it would solve these problems, presents some of its own.

X-rays were discovered in 1895 by the German professor Wilhelm Roentgen. Gamma rays are similar to X-rays but of a shorter wave length. Cathode rays are made up of high-speed electrons originating at the negative pole of an electrically-charged vacuum tube.

Experimentation showed that these rays would kill molds, bacteria and, if strong enough, inactive enzymes. But when some foods were treated with enough of a dosage to insure complete sterilization, changes in flavor, color and texture resulted. Some of the food developed a scorched or "goaty" flavor, cereal products and milk occasionally browned, meat and vegetables looked bleached, and some fruits and vegetables became soft in texture.

What causes these changes in foods? They are due partially to the fact that most foods are organic compounds and radiation causes the particles to ionize or break down into their positive and negative portions. This increase in activity causes the damage.

Each component of the molecule is affected differently, but most reactions are oxidations. Other changes may lower the nutritional value of the foods. A completely safe method of irradiating foods must be devised before large-scale consumer production can be started.

In an experiment conducted at Indiana's Notre Dame University three generations of mice were fed a sterilized diet. The researchers found no acute toxicity due to gamma ray treatment of the feeds. Additional research is being conducted in order to find out more about these changes and their effects.

While high dose applications seem impractical, there are several low dosage uses for irradiation. One of the most important of these is the prevention of potato sprouting, during storage. A small dosage of radiation will prevent this sprouting. Gamma rays are generally used for this purpose since they check growth.

The Brookhaven National Laboratories recently conducted a series of tests to determine the amount of radiation that would be most useful in this prevention. These

Atoms for Food Preservation

By SHIRLEY LEFFERT '59

tests disclosed that the taste and texture of the irradiated potatoes were satisfactory even after 18 months. Use of irradiation would mean tremendous savings to potato and onion growers and handlers.

Another feasible use for these rays is in the killing of insects that infest grain and cereal products. Millions of dollars are lost annually through insect damage to these products. Experiments have demonstrated that relatively small doses of radiation will destroy all of the metamorphic forms of insects responsible for the damage.

Irradiation can extend the storage life of a number of food products when it is used in combination with refrigeration. For example, meat can be "pasteurized" with sub-lethal doses. In this case the radiation is not strong enough to insure complete sterilization, but it does reduce the bacteria count.

There is still much work to be done before irradiated foods can be put on the market. When this process is perfected, it will be a new and economical means of preserving food, a method that will complement, rather than replace, existing processes of preserving food.

Farm Ponds (from page 13)

THESE constructional features determine the usefulness of the pond, as does location, size, depth, and source of water supply. By manipulating these factors, a pond can be built with one or more specific purposes in mind.

A pond built as a wildlife area, for instance, should be shallow enough to allow for growth of food and cover for the animals and birds. Strategically located deep ponds are needed for irrigation, fire protection, and spray-water purposes. A livestock watering pond should hold six times the anticipated seasonal needs, and should be situated near pasture and buildings. It is preferable to make the pond inaccessible to the livestock to prevent them from contaminating the water, and to have an adjoining water tank connected to the pond.

For a general purpose pond, at least a third of the area should be eight feet deep or more. For ordinary farm use, a surface area of one quarter to one acre and a capacity of 400,000 to 1,000,000 gallons is sufficient.

Enjoyment is one of the prime uses of a pond and this can be gained through swimming, ice skating, nature study, and similar activities. Thus, because of esthetic and practical values an increasing number of farmers will build ponds—a wise choice, indeed.

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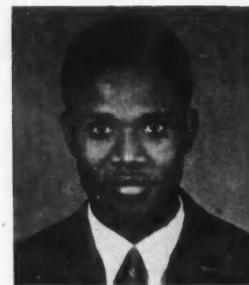
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New hormone discovery, "Coumestrol", has been isolated from Ladino Clover.



Martin Oworen

By MARTIN U. OWOREN '60

SCIENTISTS of the USDA's Western Utilization Research and Development Division have recently isolated from Ladino Clover, a new potentially valuable estrogen called "Coumestrol." Estrogens belong to a class of chemical compounds which are called hormones. They occur in plants and can be synthesized.

The new compound is known to be present in strawberries, clover, and alfalfa. It is structurally different from all known estrogens. Although it has considerably less stimulating effect on animals than stilbestrol, it is about 30 times more active than genistein.

Ensilage Tests

RESULTS of silage tests conducted by Professor W. K. Kennedy of the Cornell Department of Agronomy show that when the kind and initial quality of ensilage is good, the quality of the final product is proportional to a combination of factors. These factors are: rate of ensilage, the evenness of silage distribution and the pressure per square inch of silage. In one of the tests, a batch of silage was given a pressure of five pounds per square inch immediately after ensilage, and a second batch was given the same pressure two days after ensilage. The end product of the first batch contained more nutrients than that of the second. Also, the alfalfa leaves in it could be recognized whereas those in the second batch felt slimy and were literally inseparable.

Factors, not readily observable which affect silage quality are the types and quantities of fermentation acids produced by the forage plants.

The foregoing factors provide suitable conditions for the conversion of sugars (by lactic acid bacteria) into such effective preservatives as lactic, acetic, and succinic acid. In their absence, spore forming bacteria develop rapidly and convert lactic acid, butyric acid, and plant proteins into ammonia, hydrogen sulfide, and other compounds associated with spoilage.

Grape Pruning

THE period between leaf fall and the opening of the buds in the spring is usually considered the best time for grape pruning. However, experiments conducted at the Geneva Experiment Station over many years show that fall-pruned trees may suffer severe injuries if winter temperatures drop to 18 degrees below zero.

According to Dr. Nelson Shaulis, a Cornell Pomologist, there is something to be gained by not pruning grapes until after the first really hard freeze. "This," he says, "makes cane selection easier because immature canes will be frozen and withered." He advises the fruit grower to prune the more hardy grape varieties first, and to leave the Delaware and the Duchess until early spring if necessary.

Farm Wages

COST account experts of the College of Agriculture at Cornell report the N. Y. State farm labor averaged \$1.29 an hour in 1956. This figure is based on accounts kept on forty farms, and includes wages paid to hired farm help, members of the operator's family, and those paid by the farmer for

his own work. Men hired by the month or year received wages varying from \$267 to \$377 per month, plus social security tax and compensation insurance of \$15. The monthly wages of men boarding with the farmer's family average \$151. Board was valued at \$36. Labor hired by the day or hour received wages ranging from 73 cents to \$1.38 per hour. The account experts explain that the study included all sorts of well-run, full time commercial farm business representative of good farms in the state.

Milking Hours

DR. Kenneth Turk, Head of the Animal Husbandry Department at Cornell, says that recent research in New Zealand and at the University of Minnesota has challenged the necessity of regular milking hours. "In these experiments," he says, "cows milked at intervals of eight or 16 hours in New Zealand and 10 and 14 in Minnesota, produced as much milk and butterfat as those milked every 12 hours." Dr. Turk wonders if the same results would have been achieved with the average New York State herd. However, he remarks that "... we've been milking our Cornell herd at 11 and 13 hour intervals for many years and we don't think milk production has been affected. This procedure allows our men to finish the job before six o'clock." He further remarked that a decrease in milk production following irregularity in milking intervals might be compensated by later saving, convenience, and a richer fat and total solid content of the afternoon milk.

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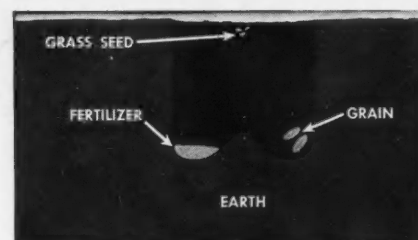
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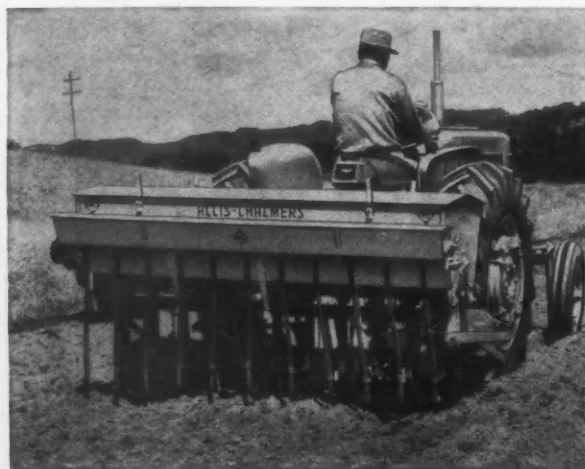
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